

We claim:

1. A method to assess oxidative stress in vivo comprising:

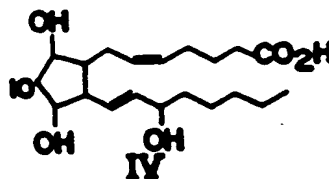
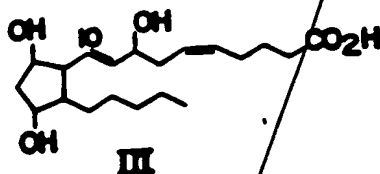
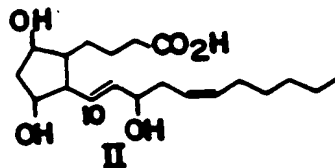
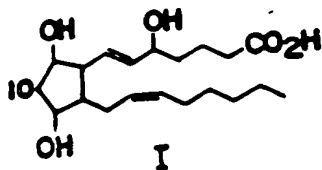
- 5 (a) obtaining a fresh sample of lipid containing biological fluid;
- (b) measuring the amount of noncyclooxygenase derived prostanoids in the sample prior to the ex vivo development of prostanoids in the sample;
- 10 (c) comparing said measured amount of prostanoids with a control; and
- (d) assessing oxidative stress in vivo based on the comparison in step c.

2. The method of claim 1, wherein said  
15 biological fluid is selected from the group consisting of plasma, cerebrospinal fluid, bile, lung lavage fluid, lymph and inflammatory human joint fluid.

3. The method of claim 1, wherein said  
20 measurement occurs within about two hours of sampling.

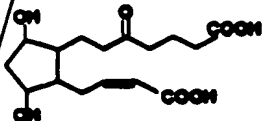
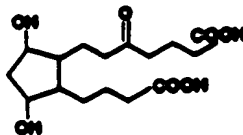
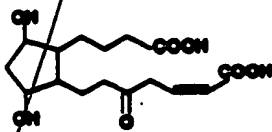
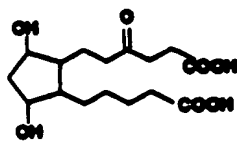
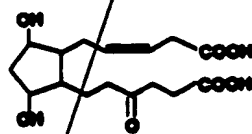
Sub. Bz

4. The method of claim 1, wherein said prostanoids are selected from the group consisting of:



5. The method of claim 1, wherein said prostanoids are prostaglandin F<sub>2</sub>-like metabolites selected from the group consisting of:

15



Sub B2  
6. A method to assess oxidative stress in vivo comprising:

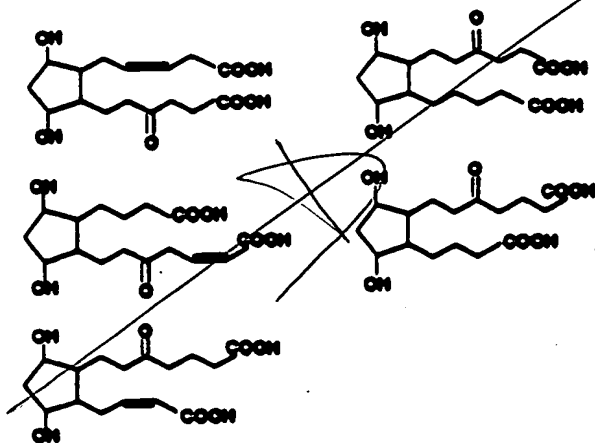
- (a) obtaining a fresh sample of urine;
- (b) measuring the amount of
- 5 noncyclooxygenase derived prostanoids in the sample;
- (c) comparing said measured amount of prostanoid with a control; and
- (d) assessing oxidative stress in vivo
- 10 based on the comparison in step c.

7. A method to assess oxidative stress in vivo comprising:

- (a) obtaining a fresh sample of tissue;
- (b) measuring the amount of
- 15 noncyclooxygenase derived prostanoids present in phospholipids in the sample;
- (c) comparing said measured amount of said prostanoids with a control; and
- (d) assessing the oxidative stress in
- 20 vivo based on the comparison in step c.

~~8. The method of claim 7, wherein said measurement occurs within two hours of sampling.~~

9. A purified and isolated composition  
comprising the formula:



5

*add B<sup>3</sup>*